

STATE OF CALIFORNIA

ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

In the Matter of:)	Docket No.03-IEP-01
Informational Proceedings and)	
Preparation of the 2005)	
<i>Integrated Energy Policy Report</i>)	
_____)	August 4, 2004

**Staff Proposal for Scoping the
2005 *Integrated Energy Policy Report***

Overview

This proposal describes the California Energy Commission staff's proposed framework for the *2005 Integrated Energy Policy Report (Energy Report)* proceeding, as directed in the July 29, 2004 *Energy Report* Committee hearing notice. In that notice, the Committee provided a list of the key issues that it believes should be addressed in the *2005 Energy Report*, which is the basis for this proposal. The public will have the opportunity to comment on these issues and on this proposal at the August 18, 2004 Committee hearing.

This proposal covers an extensive array of issues and questions to set the stage for discussion at the hearing. By offering an expansive proposal, the staff intends to solicit input from interested and affected parties on which issues require the greatest emphasis in the next year. The staff is concerned that a full analysis of all the issues and questions listed here may not be possible over the course of the next year. Analysis of these issues will require the active participation of a wide variety of interested and affected parties in workshops, through submission of data and comments, and, in some cases, by development of independent analyses for consideration by other parties and the Committee.

The *Energy Report*, which the Energy Commission is required to submit to the Governor and Legislature every two years, is the foundation for continued development of an integrated energy policy for the state. Senate Bill 1389 (Chapter 568, Statutes of 2002; Bowen) directs the Energy Commission to present policy recommendations in the report based on an in-depth and integrated analysis of the most current and pressing energy issues facing the state. In addition, the *Energy Report* process provides consistency in the underlying information state agencies and others use in carrying out their energy-related duties.

The Role of Input from Parties in this Proceeding

The staff proposes that the *Energy Report* Committee begin the process of requesting data and analyses from various parties in September 2004. Detailed input from stakeholders in the electricity, natural gas, and petroleum industries, as well as from the interest groups that care about policy development affecting these industries will be needed to complete the *2005 Energy Report*. In particular, the staff proposes that load serving entities (LSE), local distribution companies, suppliers, and marketers submit load forecasts, resource plans, and environmental assessments. These inputs and the active participation of all stakeholders will ensure that the *Energy Report* results regarding electricity issues are pertinent. Of particular importance, the *2005 Energy Report* electricity assessments will serve as the foundation for the 2006 procurement proceeding at the CPUC. The staff plans to prepare its analyses at the utility-specific level so that the analytic results available in the *2005 Energy Report* are directly relevant to LSE electricity procurement issues.

The staff is currently conducting a collaborative study of western natural gas issues under the auspices of the Western Interstate Energy Board (WIEB). This study will provide the framework for the staff's *2005 Energy Report* natural gas analyses. Because this effort was recently initiated, additional data needs are more limited for this industry compared to electricity. The staff encourages parties interested in natural gas issues in the *2005 Energy Report* to also participate in the WIEB study.

In the transportation fuels area, the staff proposes to rely primarily on its own staff analyses with the active cooperation of stakeholders in providing data for analysis. Once these staff assessments are released, they would form the basis for workshops and hearings in which stakeholder views are expected to play a major role.

Report Structure and Timing

State law requires the Energy Commission to adopt the *2005 Energy Report* by November 1, 2005. The final report will be compiled from a series of underlying reports and papers developed through a public process over the next year. To avoid duplication of effort, the staff will coordinate this proceeding with other ongoing proceedings at the Energy Commission, the CPUC, the California Air Resources Board, and elsewhere.

During the initial stage of this proceeding, staff proposes to hold a series of public workshops to engage interested parties in developing a common understanding of the major physical, economic, and policy uncertainties that affect the supply, demand, and price of the state's key energy sources. This effort will help focus the analytical work for the remainder of the proceeding by making explicit differing views of the principal reliability, economic, environmental, and public health risks relating to the key energy arenas, as discussed below.

The second stage of the proceeding, which would continue through the spring 2005, would consist of the major analytic activities by staff and other parties. The staff proposes that the Committee begin this stage with the initiation of requests for data and analysis from parties in the electricity sector. This analytic phase of the proceeding would culminate with the publication of various staff papers and reports in the late spring and early summer 2005.

The final phase of the proceeding would be Committee hearings on the reports developed during the second phase and the development of the *2005 Energy Report* itself. The staff proposes that those hearing be conducted during the summer 2005, with publication of the Committee's draft *2005 Energy Report* to follow in September 2005. This would provide adequate time for hearings throughout the state on the draft report and allow the *Energy Report* Committee to prepare a final report for the full Energy Commission to consider by the November 1, 2005 deadline.

The remainder of this document discusses staff's proposed approach to the key issues listed by the *Energy Report* Committee in its hearing notice.

Key Issues for the 2005 Energy Report

This section provides the staff's proposal for addressing the key issues listed in the *Energy Report* Committee's hearing notice. Within each of these issue areas, the staff proposes to follow the three basic phases described above, starting with workshops in later 2004 to help focus the major analytic work. That work would result in publishing staff papers and reports in the spring and early summer of 2005.

Meeting California's Energy Infrastructure Needs, the Continuing Challenge

Transportation Fuels Supply, Demand, and Infrastructure

The staff proposes to analyze transportation fuel supply and demand issues for the period of 2005-2025. The staff will develop crude oil, petroleum fuels, and alternative fuels price forecasts. These forecasts will provide essential baseline inputs for projections of vehicle attributes, transportation fuels demand forecasts, and state transportation system options analyses. The staff will also provide an update on the state's petroleum reduction efforts called for in *Reducing California's Petroleum Dependence*.¹

In the *2003 Energy Report*, the Energy Commission noted that in-state refineries operate near maximum capacity, and the state's import and storage systems have little, if any, excess capacity. In the near-term, either refinery capacity or the ability to import refined petroleum products must expand to meet increasing fuel demand resulting from increased population and economic growth. Because California oil production is declining and fuel demand exceeds refinery capacity at times in California, requirements

for additional imports of both refined and unrefined products will be needed, with requisite infrastructure expansion (e.g. major shipping ports).

In the long-term, expanding petroleum infrastructure in California may not be sufficient to meet the state's transportation energy needs. Nearly all California passenger vehicles use gasoline for fuel; when gasoline supply disruptions and sharp price increases occur, the typical Californian has few alternatives. In 2003, the Energy Commission recommended reducing petroleum fuel use by improving vehicle fuel economy and expanded use of non-petroleum fuels.

The staff proposes to address the following key questions and issues:

- What changes in the state's gasoline and diesel demand can be expected over the next 20 years?
- What changes in crude oil, blending components, and fuel imports into California can be expected over the next 20 years?
- How effective will the state's efforts be in reducing gasoline and diesel demand?
- How will global petroleum demand growth, depletion of mature oil fields, unconventional oil production, and other factors affect price and supply of crude oil and fuels?
- What effects will national and state fuel specifications have on transportation fuel production and prices?
- How available will supplies of clean burning fuels or essential blending components from out of state sources be?
- What will availability and price of non-petroleum transportation fuels be?

The staff proposes to present an issue paper at a workshop in late 2004 to focus the analysis on the key near-term and long-term transportation fuels policy issues to be addressed during the proceeding. This exploratory work would provide the basis for determining where more detailed consideration of key transportation fuels issues is needed.

Key topics and activities include:

- **Adequacy of the Petroleum Fuel Supply Infrastructure**
 - Identify current bottlenecks or constraints in the petroleum supply infrastructure at the present time.
 - Analyze the technical and economic issues related to the adequacy of California's crude oil and petroleum fuels import, storage, and distribution infrastructure to respond to supply disruptions and demand growth.
 - Evaluate potential measures to mitigate the impacts of petroleum infrastructure problems.
- **Petroleum Infrastructure Permitting Improvements**
 - Examine the petroleum infrastructure permitting process and identify opportunities for improvement.
- **Near-Term Responses to Constrained Petroleum Fuel Supplies**
 - Evaluate near-term options that reduce petroleum demand or improve availability of supplies to reduce the impacts of supply disruptions and price increases.

- **Increasing Efficiency and Non-Petroleum Fuel Supply Options**
 - Evaluate the portfolio of cost-effective efficiency improvements and non-petroleum fuel supply options to reduce California's dependence on petroleum.
- **Air Quality and Global Climate Change Considerations**
 - Evaluate the current status of transportation fuels policy with respect to the state's ongoing effort to improve air quality and reduce greenhouse gas emissions.

Electricity and Natural Gas Supply, Demand, and Infrastructure

California's growing population and expanding economy will result in higher demand for electricity. Increased demand challenges the ongoing need to reduce the environmental and public health consequences of energy use. Additionally, efficient, reliable, and competitively priced electricity supplies are critical to ensuring a vibrant economy. Infrastructure and fuels needed to operate the electricity system reliably will be assessed to identify trends and risks involving the adequacy and price of available resources. This assessment is critical for developing and implementing state policies and programs to achieve a dependable, environmentally responsible, and reasonably priced electricity supply.

A comprehensive analysis of market fundamentals, trends, and projections will be needed to understand the risks of reliance on natural gas to electric generators, industrial processes, and residential and commercial customers. In analyzing natural gas supply and demand, an assessment of pipeline and storage facility adequacy and price trends will be required. The potential to augment supplies through additional infrastructure will be considered, including pipelines, storage, and liquefied natural gas facilities located along the western US coast. Additional infrastructure may be necessary to ensure that adequate natural gas supplies are available to meet the state's needs.

Evaluating the state's electricity and natural gas supply, demand, and infrastructure will require a series of activities coordinated among the Energy Commission, the CPUC, the CA ISO, and various stakeholders in the electricity and natural gas sectors. As called for in the *2003 Energy Report*, the Energy Commission staff proposes to develop its forecasts and evaluations of supply, demand, and price as part of an integrated planning, procurement, and monitoring process that supports planning and procurement activities at the CPUC and the CA ISO. This integrated process and the staff's proposed forecast and evaluation activities are described below.

In addition, staff proposes a detailed assessment of key issues relating to the state's implementation of its preferred 'loading order' as discussed in the next section of this proposal. As adopted in the state Energy Action Plan² and emphasized in the *2003 Energy Report*, the loading order expresses the state's preference for meeting increased electricity demand through increase energy efficient first, followed by

increased renewable energy and distributed generation, and then additional clean fossil-fuel central station generation.

Integrated Planning, Procurement, and Monitoring

Early in the 2005 proceeding, the staff proposes to develop an issue paper on implementing the integrated planning, procurement, and monitoring concept for the electricity and natural gas industries. The Energy Commission staff is working with the staffs of the CPUC and the California Independent System Operator (CA ISO) to develop an integrated planning, procurement, and monitoring process. This process would explicitly link various separate Energy Commission, CPUC, and CA ISO forums for assessments, planning, procurement of generation and transmission facilities, and customer-oriented, demand management programs. Further, it would incorporate municipal utilities and other load serving entities for which state has only limited oversight authority. A draft of this issue paper would be used to engage the stakeholders in discussion at a fall 2004 workshop.

Key questions include:

- What remaining electricity planning processes (e.g. the CA ISO local area reliability service process) should be part of the initial implementation of the integrated planning, procurement and monitoring process?
- What changes in planning and procurement process are needed to ensure appropriate implementation of the loading order and avoid vulnerability from excessive reliance on natural gas?
- What coordination between the Pacific Northwest and California planning processes would maximize potential to achieve mutual benefits from seasonal exchanges between the regions?
- As CPUC-regulated entities (investor-owned utilities, electricity service providers, and community choice aggregators) implement resource adequacy requirements, should municipal utilities also be required to demonstrate compliance with resource adequacy requirements to state energy agencies?
- As the Western Electric Coordinating Council (WECC) develops a resource adequacy requirement, how should California make use of WECC planning requirements and the products WECC entities develop?
- How can environmental considerations, including global climate change, be better integrated into the planning process?

Electricity and Natural Gas Forecasting and Evaluations

The issue paper on integrated planning will be developed in parallel with the data and analysis collection efforts in the electricity and natural gas sector. The data collection, including requesting analyses and forecasts from utilities and other electricity service providers, will be a key element in developing the electricity and natural gas forecasts in the *2005 Energy Report*.

Key activities include:

- **Electricity and Natural Gas Demand Forecast**
 - Develop electricity and natural gas demand forecasts and price assessments under an appropriate range of scenarios.
 - Evaluate electricity supplies and demand management programs to meet both short- and long-term demand growth.
 - Assess natural gas supply adequacy and reliability for all consumers, impacts of seasonal or short-term market forces, and weather events on supply and price trends.
- **Resource Adequacy, Reliability, and Deliverability**
 - Assess the availability, reliability, and efficiency of the electricity infrastructure, considering the western region, California, and specific zones within California.
 - Identify opportunities and obstacles relating to electricity generation development, including renewable resources, distributed generation, and central-station natural gas power plants.
 - Identify opportunities and obstacles relating to implementation of demand management programs, and progress to date in implementation of this resource.
 - Evaluate the state's transmission planning and permitting to develop a workable system to ensure that needed transmission can be built in a timely, cost-effective, and environmentally sensitive manner.
 - Evaluate the ability to deliver electricity from existing and proposed sources, and the possible need for new planning mechanisms to ensure deliverability.
 - Evaluate the adequacy of existing and expected market and regulatory mechanisms for electricity load serving entities to manage their exposure to uncertainty of plant outages, risks of retirement, and uncertainty in future development of generation and demand management programs.
 - Analyze long-term adequacy of natural gas infrastructure, including possible expanding pipeline capacity and storage facilities, and the potential development of new liquefied natural gas terminals. Identify a range of possibilities that would reasonably assure a supply of natural gas for the next decade.

Options for balancing electricity and natural gas supply and demand

In the *2003 Energy Report*, the Energy Commission noted that additional electricity and natural gas supplies will be needed later this decade to meet growing energy demands.

While significant work is underway in various forums to address these needs, the staff anticipates that some lingering as well as some new concerns will have to be addressed in late 2005.

A better understanding of electricity and natural gas system dynamics is required to determine the mix of supply and demand options that can best fit the growing energy needs. Traditional energy need criteria, such as planning reserve margins, cannot capture the unique attributes of the California energy systems. California must have a strong and flexible energy infrastructure coupled with efficient industry performance rules to ensure that consumers receive reliable, reasonably priced electricity and natural gas and to promote economic growth, protect public health and safety, and protect the environment. The interrelationship between electricity and natural gas markets will complicate California's ability to meet this goal.

In the spring of 2005, the staff proposes to publish a white paper listing and evaluating key options for addressing the state's electricity and natural gas needs. The information developed on the supply and demand balance in the forecasting work will provide a current understanding of the magnitude and nature of these requirements. The workshops and analyses conducted on the implementation of the integrated planning, procurement, and monitoring process along with achieving the state's loading order will shape the development and evaluation of the options for addressing these needs.

The evaluation of these options should consider key features of the state's energy needs. The generation system must be extremely flexible to meet changes in demand and supply availability. Some facilities must be available to cycle up and down quickly to accommodate wide daily swings in demand, including the high summer peaks that occur for only a few hours of the year, and the changing availability of intermittent resources such as wind. Although difficult to predict far in advance, extreme hot and cold temperatures will occur and can be planned for based on the likelihood, frequency, scale, intensity, and duration of probable weather-related demand occurrences. A better understanding of the operational issues underlying this need for flexibility may allow for better integration of varied resources.

The system must also accommodate the varying availability of generation, pipelines, transmission lines, storage facilities, fuel sources, and growth in electricity demand. All plants need periodic scheduled maintenance, when they are out-of-service, and all plants are vulnerable to shut down for emergency repairs. Generation levels also fluctuate because of seasonal and year-to-year variability of hydroelectric resources. Understanding these risks and contingencies can lead to development of risk management tools that can help create a better system for achieving safe, reliable, and affordable energy services.

Achieving California's Preferred Energy Loading Order

Energy efficiency and demand response programs offer California alternatives for reducing the cost and environmental impacts of electricity generation and natural gas use. Incentive programs, public information efforts, and rates that allow customers to save the market cost of electricity and natural gas can all contribute to more efficient energy use. By reducing demand for electricity and natural gas, increased efficiency can mitigate the risk to Californians of shortfalls and price spikes.

Increasing the use of renewable energy is a critical part of California's strategy to reduce dependence on natural gas. The cost of many renewable energy resources has declined, and recent contracts for renewable energy include rates that appear competitive with natural gas alternatives. Research and development is expected to further reduce costs and expand potential (e.g., low-speed wind turbines). At the same time, renewable development is affected by costs associated with transmission access/availability, integration of intermittent resources (e.g., possible change in dispatch philosophy), and declining levels of cost-effective resources available for further development.

Distributed generation offers the option of using fuel efficiently, while reducing load on the electricity supply system and avoiding the morass of central station and transmission siting processes and timing. Additional work is needed to consider distributed generation in demand and supply forecasting, the impacts of distributed generation on the transmission and distribution systems as its level of adoption increases, and other issues.

Consideration of these issues during the development of the *2005 Energy Report* must be coordinated with ongoing proceedings at the Energy Commission and CPUC in the areas of renewable resources, demand response, energy efficiency, and distributed generation.

Key topics and questions include:

- **Monitoring and Evaluation**
 - Expanding energy efficiency as a reliable resource requires evaluation of program effectiveness to mitigate risk of shortfalls. How should existing evaluation and monitoring/verification efforts change to mitigate risks of unexpected shortfalls?
 - The CPUC is approving demand response programs with rates that will vary with electricity costs to providers, allowing customers to benefit from reducing demand during peak times. How should monitoring and evaluation efforts be conducted to facilitate reliance on these programs in planning electricity system investments?
 - What is the progress in implementing demand response programs? What are the barriers to their implementation?

- When distributed generation is part of a customer's demand response strategy, how does this affect the reliance on that resource for planning purposes?
- **Integrating Efficiency with Electricity System Needs**
 - Can we determine what types of efficiency measures can have the greatest benefit for California's electricity system in the short-term and long-term?
 - Can we target programs and regulations to the times and places that are most cost-effective?
- **Integrating of Renewable Resources**
 - How can the state facilitate the cost-effective system integration of renewable resources on an accelerated time frame? What is the role of the Energy Commission's Public Interest Energy Research Program (PIER) in this effort?
 - What options are available to better integrate intermittent renewable resources into California's electricity grid?
 - Can aggregation and dispatch strategies be implemented with renewable distributed generation to reduce the effect of intermittency of the resource?
- **Developing Renewable Energy Development**
 - What are the next steps for addressing the challenges and risks that could delay reaching statewide goals for accelerated renewable energy development related to transmission access, adequacy of public goods charge funds, permitting, and project finance?
 - What information is available or should be developed to provide a clear representation of the advantages and disadvantages of a renewable energy certificate (REC) trading system? What are the necessary features of a REC trading system?
- **Planning the Role of Distributed Generation in the System**
 - What work is underway (timing and focus) to improve forecasting for distributed generation?
 - What information is needed to assess the technological and economic feasibility of distributed generation better as a supplement to utility generation and delivery?
 - What are the impacts of high-penetrations of distributed generation on the transmission and distribution system?
 - What additional steps would reduce the regulatory uncertainty surrounding distributed generation?
 - Can different tariffs or rates be crafted to provide better price transparency to distributed generation owners?
- **Increasing Environmental Improvements Through the Loading Order**
 - How can the state's preferred loading order be implemented to include consideration of the environmental benefits that can be achieved?
 - Are there opportunities to increase environmental benefits in a cost-effective manner by encouraging particular programs and particular resources, or by retiring particular existing generation facilities?

Energy, Environmental and Economic Sustainability

Global Climate Change

Global climate change will have adverse impacts on the economy, public health, and environment in California and beyond. While the specific consequences are not entirely predictable, they are becoming more evident. Major research efforts are underway to predict the impacts of climate change, including work funded by PIER to develop new analytical tools and methods to assess the effects of climate change and the relative merits of alternative adaptation strategies.

Emissions of greenhouse gases in California are significant in volume and growing. The combustion of fossil fuels — including gasoline, diesel, jet fuel, and natural gas fuels — accounted for more than 75 percent of California's 1999 greenhouse gas emissions, and emissions are expected to continue to rise as a result of population and economic growth. Land use changes over the 1990s also led to reduced carbon storage in California's landscapes. In addition, emissions of non-carbon dioxide emissions such as methane and nitrous oxide, while small in relation to carbon dioxide emissions, may have intense impacts. New policies and strategies are needed to reverse these trends.

The State of California is working with the States of Oregon and Washington and the Province of British Columbia through the West Coast Governors' Global Warming Initiative to identify state and regional actions to address increased climate change and climate variability. Short-term mitigation options should be explored and appropriate longer-term measures taken to help the state adapt to changing climatic conditions. California's energy system has historically used low-carbon fuels and employed a broad base of efficiency measures. Given the projected growth in greenhouse gas emissions, however, new policies and programs will be needed to mitigate and adapt to future climate changes. Both market-based and technology solutions should be further explored.

Key topics and questions include:

- What can be done to reduce greenhouse gas emissions from fossil fuel consumption and address land use changes affecting carbon storage in California?
- What are the expected near-term and long-term effects of climate change on California's natural resources, public health, and economy? How can the harmful effects be avoided, reduced, mitigated, or compensated? What harmful effects are considered unavoidable or very difficult to mitigate at reasonable cost?
- How can state agencies better communicate with the public on the topic of climate change and greenhouse gas emissions?

- Which adaptation and mitigation strategies appear to be the promising? Which promise the most short-term and cumulative net societal benefits? Which strategies appear to merit further study, demonstration, or evaluation?

Water Supply/ Energy Interactions

Global climate change is expected to affect California's hydrologic cycle by a shift in precipitation from snow to rain and an earlier melting of the snow pack in the Sierra Nevada. Such changes, particularly if accompanied by reduced precipitation, could have significant consequences not only for the state's water supply system but also for the state's electricity system. In addition, other water management responses could have consequences for the electricity system. For example, past droughts resulted in a significant increase in groundwater pumping, more wheeling of water through the system, and other management responses that all had electricity and environmental consequences.

In addition, a number of local communities in California are actively investigating desalination of ocean water or brackish groundwater as a new water supply. Such facilities would be major electricity users and raise environmental concerns that must be addressed.

Key topics and questions include:

- **Climate Change Effects on Hydropower Generation**
 - What are the anticipated impacts of changing weather patterns on hydropower generation?
- **Desalinization**
 - What are the impacts to marine ecosystems from new desalinization projects? What brine disposal options exist for inland facilities?
 - What are the implications for the electricity system of reliance on desalination to supply water to local communities?

Petroleum Infrastructure Environmental Performance Report

In the *2005 Energy Report*, the staff proposes to examine the environmental trends of the petroleum infrastructure development, including: marine terminals, refineries, storage terminals, and pipelines. The Energy Commission's *2003 Energy Report* states that a major barrier to expanding petroleum infrastructure is the difficulty in acquiring construction permits from multiple local, state, and federal authorities. Developing and implementing policies to ensure an economic, reliable, and environmentally sensitive supply requires an understanding of the environmental trends associated with the petroleum industry. Preliminarily, the key environmental attributes that will be examined by this project will include:

- Air Quality
- Biological Resources
- Environmental Justice
- Hazardous Materials Management
- Land Use
- Oil Spill Prevention
- Public Health and Toxic Pollutants
- Safety and Community Issues
- Socioeconomics
- Traffic and Noise
- Waste Management and Toxics Site Cleanup
- Water Quality and Supply

Key questions include:

- What is the environmental footprint of the state's existing petroleum infrastructure?
- What are the environmental and health risks of:
 - importing increased quantities of petroleum and refined products through existing or expanded marine terminals
 - transporting increased quantities of petroleum and refined products through existing and expanded pipelines or other delivery systems like rail and tanker trucks
 - storing increased quantities of petroleum and refined products and
 - either expanding or adding refineries to increase efficiency and throughput?
- What environmental risks are presented by future development of petroleum infrastructure?
- What planning information do local, regional, and state agencies need to address environmental risks from petroleum infrastructure development?
- What are the best permitting and environmental review practices for petroleum infrastructure projects?

Electricity Generation Environmental Performance

During the *2003 Energy Report* proceeding, the staff conducted a detailed environmental performance analysis of the electricity generation sector. For the *2005 Energy Report*, the key questions include:

- **System-Level Status and Trends**
 - What are the trends and key environmental issues of California's electric power generation, natural gas, and transmission systems?
- **Regional Assessments**
 - Do environmental trends or environmental issues vary by air basins, watersheds, ecosystems, or communities? If so, what differences and issues need to be address on regional bases?

- How will distributed generation affect regional environmental issues if substantial penetrations occur?
- **Energy Imports**
 - What is the environmental profile of electricity generated and natural gas produced in other states and countries for import into California?
 - What are the impacts to water and land resources from expanded development of Rocky Mountain natural gas fields? Will these impacts affect the availability of natural gas for California?
- **Environmentally Beneficial or Harmful Resources**
 - Are particular portions of the state's electricity and natural gas system particularly benign or beneficial from an environmental perspective? Are any portions particularly harmful? Do current policies adequately account for these benefits or harm?
 - How can the permitting process for new energy infrastructure better address the need to conserve rare habitats in the state?
 - What opportunities exist to use biomass production for electricity generation to improve forest health?
- **Sustainable Urban Energy Planning**
 - What are the energy-related sustainable environmental issues facing local governments and what tools and programs are needed to address these issues?
 - How can local and regional governments effectively engage in energy planning to improve energy efficiency? What should the role of the state be in aiding these local and regional efforts?
- **Indoor Environmental Quality**
 - What is the relationship between sources of pollution, building design, and energy use practices on indoor air quality?
- **Environmental Justice and Community Concerns**
 - What are the impacts of extant and proposed power generation projects on low income/minority communities? Does an anticipated shift to a distributed generation electricity market significantly change the nature or magnitude of these impacts?
- **Policy Reviews**
 - How can the state best monitor the implementation of environmental policy recommendations related to the state's energy system in this proceeding and in future years?

California-Baja California Border Issues

The California and Baja California, Mexico border area experiences numerous growth-induced energy and environmental problems that affect energy supply and demand on both sides. Over 3 million people reside within 100 kilometers of the border, in the region from San Diego to Mexicali. Demographers forecast that this population will double in size by 2020. The region is also becoming an “energy corridor” as global companies have proposed and developed facilities not only to meet local needs, but to export across the border.

Key questions include:

- What mutually agreeable steps can be taken to reduce energy demand and increase energy production to meet the needs of California and Baja California?
- What mechanisms can California and Mexico explore for coordinating environmentally friendly, sustainable energy infrastructure planning and development to meet future growth in the border region?
- How can local, state, and national permitting processes be matched in terms of timing, environmental thresholds, and mitigation goals?
- How can California engage the U.S. and Mexican governments, international organizations, local governments, community groups, and private enterprise to help resolve energy-related environmental problems such as air pollution and greenhouse gas emissions, traffic congestion, water supply, and environmental justice in the border region?

Endnotes:

¹ This report was adopted by the Energy Commission and California Air Resources Board in 2003, as directed by AB 2076 (Shelley, Chapter 936, Statutes of 2000), and was the basis for many of the Energy Commission's transportation fuels recommendations in the *2003 Energy Report*. The report, along with information on the proceeding that resulted in its adoption, can be found at: [\[http://www.energy.ca.gov/fuels/petroleum_dependence/index.html\]](http://www.energy.ca.gov/fuels/petroleum_dependence/index.html).

² The Energy Action Plan establishes shared goals and specific actions to ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. The plan was adopted by the Energy Commission, the California Power Authority, and the California Public Utilities Commission in 2003. Information on the Energy Action Plan, including the adopted plan and information on the ongoing meetings among the three agencies, is available at: [\[http://www.energy.ca.gov/energy_action_plan/index.html\]](http://www.energy.ca.gov/energy_action_plan/index.html).